RECLAMATION

Managing Water in the West

Draft Environmental Assessment

Contract between the United States and the Pine River Irrigation District for the Use of Project Water for Miscellaneous Purposes

U.S. Department of the Interior
Bureau of Reclamation
Western Colorado Area Office

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CONTRACT BETWEEN THE UNITED STATES
AND THE PINE RIVER IRRIGATION DISTRICT
FOR THE USE OF PROJECT WATER FOR
MISCELLANEOUS PURPOSES

Summary of Environmental Assessment

The environmental assessment evaluates a proposal to execute a contract allowing use of a limited amount of irrigation water from the Pine River Project for other purposes, primarily drinking water supplies, in order to meet the needs of a growing population in portions of La Plata and Archuleta Counties in southwest Colorado.

Vallecito Reservoir of the Pine River Project regulates and stores flows of the Pine River for irrigation and flood control purposes. The project was constructed by the Bureau of Reclamation and is operated by the Pine River Irrigation District. Approximately 55,000 acres of Southern Ute Indian Tribe and private land receive irrigation water from the project. The project service area is experiencing increased residential growth and this trend is expected to continue. Domestic water supplies in the area include individual wells and, in developed areas such as the town of Bayfield, treatment and distribution systems. There are both quality and quantity problems with the existing domestic supplies.

The proposed alternative in the environmental assessment provides a contract between Reclamation and the Pine River Irrigation District to allow conversion of a limited amount of irrigation water to other uses, primarily domestic uses. This conversion is seen as the most practical method of meeting existing and future domestic water supply needs. The impact analysis shows that with the conversion, existing irrigation supplies would be protected and minor changes in streamflows and reservoir content would result. The present trend of residential growth and smaller agricultural tracts is expected to continue. Resources such as fish and wildlife, endangered species, wetlands, recreation, cultural resources, and Indian Trust Assets are not expected to be significantly affected.

Public scoping meetings and public contract negotiations were held during preparation of the draft environmental assessment. Following public review of the draft, a final environmental assessment will be prepared.

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1. INTRODUCTION AND PURPOSE AND NEED

1.1 Introduction:

The Pine River Project (Project) has provided irrigation water to portions of southeast La Plata and southwest Archuleta Counties, Colorado (see Figure 1) for over 60 years. This draft environmental assessment (EA) addresses the proposed conversion of a limited amount of Project irrigation water to other purposes and has been prepared in cooperation with the Pine River Irrigation District (District). The EA is written in compliance with the National Environmental Policy Act of 1969 (NEPA), the Endangered Species Act, and related federal policies and regulations. If, based on this analysis and comments received on the draft EA, Reclamation concludes the proposed action would have no significant impact on the human environment; preparation of an Environmental Impact Statement would not be required.

1.2 Purpose and Need:

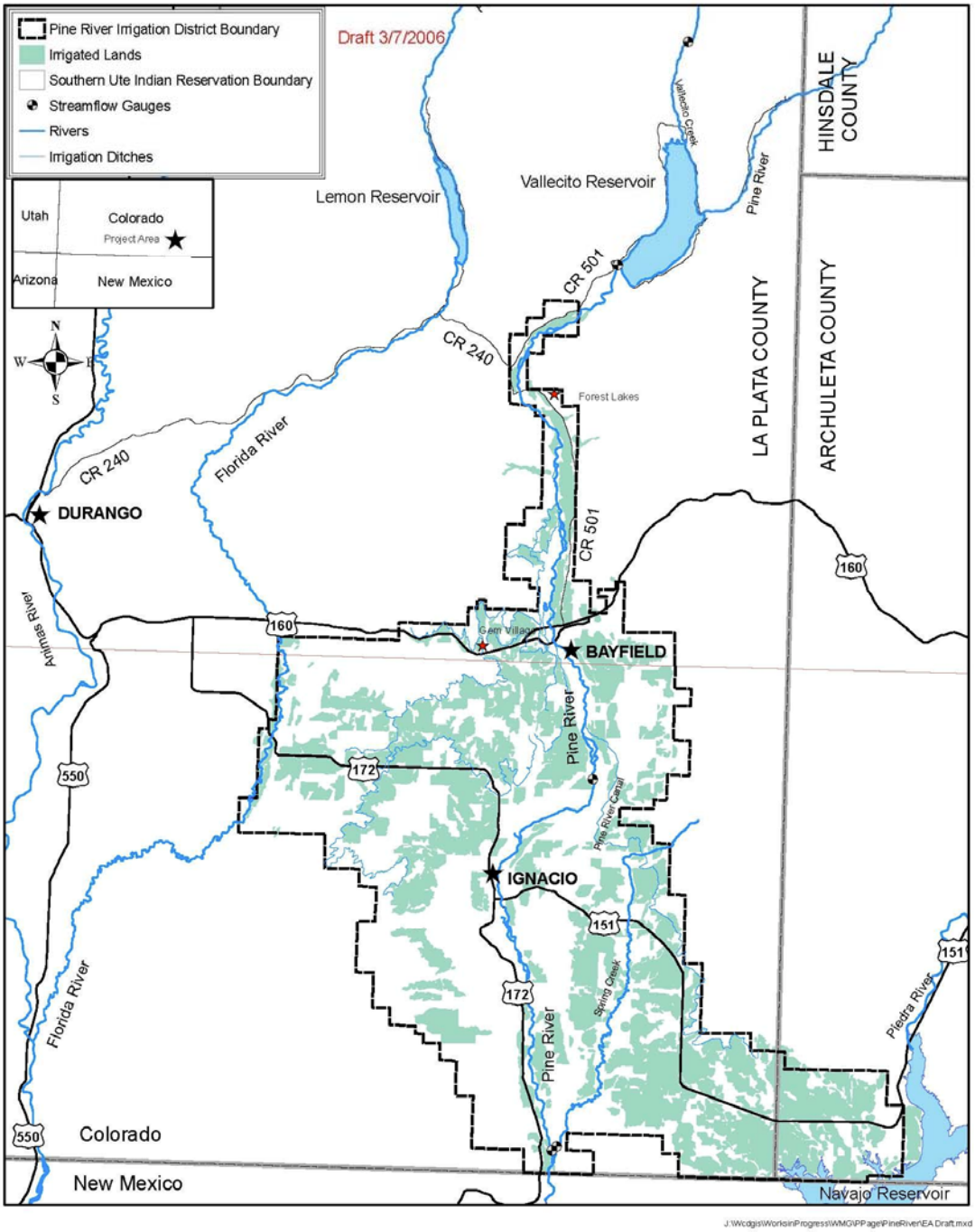
A plan and legal agreement are needed to provide the framework to allow conversion of Pine River Project irrigation water to other miscellaneous non-irrigation uses in order to address existing and future domestic, municipal, and industrial (M&I) water needs of the increasing population in the project area[1]. More specifically purposes include (1) providing a method for the District to address the existing and potential future M&I water needs in the area brought about by residential growth; (2) confirming that existing M&I water uses are in compliance with Reclamation law, specifically the Act of February 25, 1920 (41 Stat. 451), referred to as the "1920 Act"; and (3) protecting the existing irrigation purposes of the Pine River Project.

1.3 Proposed Action:

The proposed action is "execution of a contract between the District and Reclamation that makes a limited amount of project irrigation water available for miscellaneous uses other than irrigation and that further documents the terms and conditions for using the converted water." Converted water would be released from Vallecito Reservoir, the

[1] Miscellaneous uses could include uses such as domestic, municipal, industrial, fire control, and fish and wildlife.

Figure 1 - Pine River Project Area



major feature of the Pine River Project, (1) as exchange water to the Pine River[2]; or (2) to the Pine River for direct diversion by private parties or other users, through existing, improved, or new diversion facilities. In most cases the water would be combined with non-project water to meet needs. While the proposed contract identifies up to 6,700 acre-feet (af) of water to be potentially converted, this EA only addresses 3,000 af of that water, all of which would be used within the existing service area of the District. The service area includes the entire Pine River Basin, the lower Piedra River Basin, and the Florida River Basin east of the Florida River.

Execution of a contract is contingent on a finding by Reclamation that the proposed action is in compliance with the 1920 Act, which, among other provisions, states that a proposed conversion shall not be detrimental to existing irrigation uses.

The proposed action would only make water available for release to the Pine River by the District. Distribution of the converted water is not part of the proposed action. The proposed action also does not provide approval or control for any particular land use such as for new homes, municipal supplies, wells, or other activities for which Reclamation has no authority or responsibility. While the District's responsibilities end once the water is released from Vallecito Reservoir, for the purposes of analyzing potential effects of the proposed action, the delivery point as defined in this document is the point on the Pine River where Project water is being used as part of an exchange plan or as a direct diversion. Generally, this area includes the Water Critical Area, as defined by the Colorado Division of Water Resources, which extends along the river corridor from Vallecito Dam to the Pine River Canal diversion point, approximately 4 miles downstream of Bayfield, Colorado.

2. BACKGROUND

2.1 Background and History:

The Pine River Project consists of Vallecito Dam and Reservoir, and associated land and facilities. The project was authorized in 1937 under provisions of the Department of the Interior Appropriation Act of June 25, 1910 (36 Stat. 835). Construction was initiated in May 1938, and the project facilities were dedicated on September 14, 1941. The authorized purposes of the project are to provide supplemental irrigation water to both the Southern Ute Indian Tribe (SUIT) and non-Indian water users and to provide flood control benefits. Approximately 15,000 acres of land on the SUIT Reservation and approximately 40,000 acres of private land receive irrigation water.

Fifty percent of the Project cost was allocated to flood control and 50 percent to irrigation, with 5/6 of the irrigation cost and Project water supply assigned to the non-

[2] Exchange water is water provided from Vallecito Reservoir to offset the diversions of junior or non-decreed water uses in the Pine River so that those uses can continue to divert. For example, a new domestic well can obtain exchange water that can be released from Vallecito to the Pine River to replace the well's diversions and thus protect senior water rights in compliance with Colorado water law.

Indians and 1/6 of the irrigation cost and Project water supply assigned to the SUIT. The District is responsible for the operation and management of the Project. The District's portion of the construction costs has been repaid; and pursuant to Civil Action No. 1248-B, District Court, La Plata County Colorado, the Project water rights are in the name of the District.

2.2 Need for Municipal, Industrial, and Domestic Water:

M&I water supplies in the District service area are supplied from individual wells and cisterns or small water suppliers. The area is experiencing tremendous growth and, as a result, agricultural lands are being subdivided for development. Domestic water supplies are frequently in short supply and in many instances the water quality is poor. Because part of the project area has no developable groundwater and many domestic wells do not meet water quality standards, some residents have water hauled to their homes for consumption. The lack of centralized sewage disposal systems, extensive drilling and gas production activities, and natural sources all contribute to the poor groundwater quality. The area has a need to acquire additional water to supply the long-term needs of a growing population, and Project water is the only practicable supply to meet this need.

2.3 Historic Use of Water for Non-Irrigation Purposes:

Use of Project water for M&I purposes has been occurring since the Project was completed. Historically, both Indian and non-Indian water users within the District used Project water from the irrigation canals for domestic purposes as has the town of Bayfield, Colorado. Bayfield has supplemented their water supply by buying shares from irrigation ditches which receive Project water and changing the use of the water in District Water Court from irrigation to M&I.

The Colorado Division of Water Resources designated the Pine River watershed upstream of the Pine River Canal (about 4 miles downstream from Bayfield) as a "water critical area" which means there is not adequate water in the Pine River to meet the decreed water rights all of the time. In order for out-of-priority water uses (e.g. recent wells and ponds) to continue to use water during the times there is insufficient water in the basin, replacement or exchange water is released from Vallecito Reservoir. The District currently provides Project water for exchange for about 225 wells and/or ponds to allow these junior uses to continue.

2.4 Negotiations between Reclamation and the District:

For a variety of reasons, up until the mid 1990's, the District's historical use of minor amounts of Project water for M&I purposes was never resolved. Then, in the mid 1990's, the District formed the Vallecito Water Company (VWC) as a separate, non-profit corporation to plan, construct, and operate a rural domestic water system to serve southeastern La Plata County. At that time, the District Board of Directors and the District shareholders voted to provide up to 2,000 af of Pine River Project water annually from storage in Vallecito Reservoir for VWC as the water supply for the M&I system.

With VWC proposing to use 2,000 af of Project water for the proposed rural domestic water system, Reclamation staff contacted the District Board of Directors and stated their position that a change in use of water would require a contract that involved Reclamation approval. Reclamation and the District initiated discussions in 1995; however, issues over contract term limits and payment amounts were not resolved and no agreements were reached. Subsequently, in 2001, the District dissolved VWC due to financial and organizational concerns. However, the need for M&I water in the area and the District's desire to provide a reliable supply to meet that need continued.

In 2003, a group called Opponents of the Gopher Hole Project, LLC, [3] filed suit against the District opposing the new proposed lease of 2,000 af of water from the reservoir to provide a water supply for the proposed La Plata-Archuleta Water District (LAPAWD). The La Plata County District Court ruled, among other things, that the District Board of Directors has discretion to allocate water between domestic and irrigation uses without expressed approval of the shareholders. While this ruling resolved issues at the State and local level, Federal authority to allow the conversion of irrigation water to M&I uses remained unresolved.

In 2004, Reclamation again initiated discussions with the District in an attempt to resolve the outstanding issue of use of Project water for M&I uses. Reclamation presented a contractual concept that involved the use of the 1920 Act. This Act authorizes the Secretary of the Interior to enter into contracts to supply water from any project irrigation system for purposes other than irrigation, upon such conditions of delivery, use, and payment as the Secretary may deem proper, provided: (1) That the approval of such contract by the water users' association or associations shall have been first obtained; (2) That no such contract shall be entered into except upon a showing that there is no other practicable source of water supply for the purpose; (3) That no water shall be furnished for the uses aforesaid if the delivery of such water shall be detrimental to the water service for such irrigation project or to the rights of any prior appropriator; and (4) That the moneys derived from such contracts shall be placed into the Reclamation Fund to the credit of the project from which such water is supplied.

Reclamation and the District initiated contract negotiations in December 2004, but temporarily suspended negotiations when the subject of contract term and renewal became an issue. Reclamation subsequently determined the contract could contain a 40 year repayment term, at the end of which time the District's repayment obligations would be fulfilled. Contract negotiations resumed in June 2005 and both parties are close to a final contract. The final draft contract, hereafter referred to as the Contract is included as Appendix A.

[3] Opponents of the Gopher Hole Project, LLC vs. Pine River Irrigation District, District Court, La Plata County, Colorado, No. 03 CV 300.

2.5 Related Activities:

There are several water activities related to the ongoing rapid growth in La Plata County. The "La Plata-Archuleta Water District" has been proposed, but not enacted, to construct a rural water system for southeast La Plata County with possible expansion into Archuleta County. Such a district could treat and distribute water to rural areas to address water quality and quantity, fire protection, and other problems. Vallecito Reservoir irrigation water would be a potential supply source for the water district.

A "Voluntary Shareholder Pool" has been authorized by District Court Decree. Some ranchers and farmers in the Pine River Irrigation District have begun the process to implement the "Voluntary Shareholder Pool" by forming a corporation to act as the pooling agent and requesting statements of interest to include irrigated land in the Pool. In early 2006, the District Board of Directors approved a contract with the corporation. Participants in the Pool agree to commit a portion of their irrigation water for long-term lease to other uses. Revenues from the lease would go to individual Pool members and the District. Water provided by the Voluntary Shareholder Pool would have to comply with the Reclamation/District Contract.

3. ALTERNATIVES

This section of the EA describes the Proposed Alternative and the No Action Alternative, as well as other alternatives considered but rejected.

3.1 No Action Alternative:

Under No Action, a contract to authorize use of Project water for miscellaneous purposes would not be entered into by the District and Reclamation. The existing non-irrigation uses of Pine River Project water would likely continue in non-conformance with Federal law and the United States would likely seek discontinuation of this use, resulting in disruption of existing domestic water uses, reduced revenue to the District, and higher assessments to the District shareholders. Another more likely outcome would be that the United States would resolve the existing uses by some other method, such as a contract action to authorize only the existing M&I water uses. Under these scenarios, no additional water would legally be made available for future non-irrigation use from the Pine River Project.

3.2 Proposed Alternative:

The Proposed Alternative is execution of a contract (final draft contract in Appendix A) to allow conversion of 3,000 af of Pine River Project irrigation water to other uses. There would be no provision for water distribution facilities.

Under the Proposed Alternative, the District would be authorized to use up to a total of 3,000 af of project water for M&I and miscellaneous uses. Water provided (leased water)

under the proposed Contract would be released from Vallecito Dam to the Pine River or taken directly from Vallecito Reservoir or upstream tributaries. The Proposed Alternative is designed to meet increased non-irrigation water needs in the project area for the next 50 years and would provide the following:

- Historic (existing) non-irrigation uses of Project water would continue and would be in conformance with Federal law. This represents approximately 500 af of individual water uses (individual uses being less than 20 af and termed a "minor use") and use of a total amount of 150 af by the Town of Bayfield and the Forest Lakes Metro District. The minor uses would be handled contractually under individual "Application for Exchange" agreements, and Bayfield and Forest Lakes would be contractually handled under separate Third Party Contracts[4], subject to approval by Reclamation.
- Project water, totaling 1,500 af, would be made available by the District for future minor uses (less than 20 af per use) using the "Application for Exchange" as the approving document.
- Project water, totaling 850 af, would be made available by the District for future Third Party Contracts.

The District would charge non-irrigation water users based on annual operation and maintenance costs; contract administration costs; and annualized system improvement costs, replacement costs, and water conservation activity costs associated with the Pine River Project. A portion of revenues would be paid to the United States to be deposited into the Reclamation Fund to the credit of the Pine River Project. Additional financial details are included in the proposed contract.

3.3 Other Alternatives Considered:

Consideration was given to having this EA provide complete NEPA compliance on all future Third Party Contracts (for a total of 6,700 af). As stipulated in the proposed Contract, additional Project water totaling 3,700 af could be made available for M&I and other miscellaneous uses through future Third Party Contracts, subject to approval by Reclamation. This water could include water from the Voluntary Shareholders Pool and that particular water could be used outside of the District. These Third Party Contracts would be subject to future compliance with NEPA, the 1920 Act, and other environmental regulations. This EA does not provide NEPA compliance for the 3,700 af because details on the uses are not known at this time. While these potential future contracts are mentioned in this EA, Reclamation does not believe that there is sufficient information on these potential future water uses at this time to provide NEPA compliance and that future environmental analysis will be needed before they can be approved. Providing for the conversion of additional water, beyond the 6,700 af identified in the proposed contract, was also considered; however, it is believed that the amount of water

[4] As defined in the Contract, a Third-Party Contract means a contract between the District and a Third Party Contractor, pursuant to the Reclamation/District Contract and subject to the approval of the United States, for the delivery of leased water.

provided under the Proposed Alternative is adequate for future needs in the project area for many years. Therefore additional water was not considered in detail.

Another possible alternative to the proposed action is that the United States would resolve the existing uses by some other method, such as some other contract action or Federal Law to authorize only the existing water uses. Since this alternative does not address potential future water conversions, it was not considered in detail.

4. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

4.1 Introduction:

This chapter discusses resources that may be affected by the No Action Alternative and by the Proposed Alternative. During preparation of the EA, information on issues and concerns was received from affected water users, resource agencies, and private citizens (see the Consultation and Coordination Chapter for further details).

For each resource, existing conditions are described and direct, indirect, and cumulative impacts are considered.

- Direct impacts—these are impacts which are caused by the action and occur at the same time and place.
- Indirect impacts—these are impacts which are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable.
- Cumulative impacts—these are impacts which result from the incremental impact of the alternatives when added to other past, present, and reasonably foreseeable future actions regardless of which agency or person undertakes the actions.

One of the primary purposes of the Proposed Alternative is to provide water to a growing population in the Pine River Project area. Such growth has and continues to result in changes in land use and natural and cultural resources. Reclamation does not have the authority nor the responsibility to control or direct growth in the area; this authority and responsibility lies with local governments and SUIT.

4.2 Hydrology and Water Quality:

4.2.1 Existing Conditions:

The Pine River and its tributaries are the source of the water supply for the lands in the Pine River Valley. The Pine River and its principal tributary, Vallecito Creek, rise in a rough mountainous region of the San Juan Mountains and flow in a general southerly direction to Vallecito Reservoir, located at the head of the Pine River Project area. This reservoir provides irrigation storage water to the Pine River Project. From the reservoir, the Pine River flows south about 30 miles through the project lands to the Colorado-New

Mexico State line and continues another mile or two to Navajo Reservoir on the San Juan River.

The Pine River is primarily a snow fed river and consequently the greater portion of the runoff occurs during high spring flows, usually during the months of May and June. The streamflow decreases rapidly after the spring peak, and is usually at the lowest flow from November through March.

Vallecito Reservoir is the only major reservoir in the project area and has regulated the streamflow since 1941. The reservoir has an active (useable) capacity of 125,400 af and a maximum surface area of 2,720 acres. The mean annual inflow to Vallecito Reservoir for the 1941-2005 period of record was 268,500 af. The minimum annual inflow was recorded in 2002 at 74,500 af, and the maximum annual inflow was in 1979 at 436,200 af. Table 1 is a list of stream discharge records, published by the USGS, available for the Pine River drainage. Annual discharges for years of complete record are shown in Table 2. Summary statistics of Vallecito Reservoir inflows and releases and Pine River at La Boca and Spring Creek at La Boca are shown in Table 3.

Table 1 –Gaging Stations in project area.

Site Number	Site Name	Daily flow data begin date	Daily flow data end date	Drainage Area Sq. Miles	Notes
9352800	Pine River above Vallecito Reservoir	1996	2002	N/A	WQ
9352900	Vallecito Creek above Vallecito Reservoir	10/1/1962	Present	72.5	
9353000	Vallecito Reservoir .	3/1/1941	Present	255.0	
9353500	Pine River near Bayfield, CO	10/1/1927	9/30/1986	270.0	
9353800	Pine River near Ignacio, CO	10/1/1999	Present	340.0	
9354000	Pine River at Ignacio, CO			448.0	
9354500	Pine River at La Boca, CO.	1/1/1951	Present	520.0	
9355000	Spring Creek at LaBoca, CO	1/1/1951	Present	58.2	

Following the irrigation season in the fall, the reservoir begins to refill. Winter storage, however, is limited to 77,000 af in order to prevent ice damage to the spillway's radial gates. Following the severe drought of recent years, reservoir managers at Vallecito and in many other areas of western Colorado have become more conservative in their efforts to fill their reservoirs and maximize storage of winter inflow to the extent possible in anticipation of possible low spring inflows.

Normally snow melt and associated inflow begins to increase in mid-April, and more water is stored. Downstream irrigation also begins at this time and the natural streamflow is passed through the reservoir as needed to meet downstream senior irrigation water rights. Peak inflows and peak reservoir content generally occur in the May-July period. Following the peak inflows, when downstream irrigation needs cannot be met using the natural streamflow, a "call" is placed on the river; and the District begins releasing storage water to project shareholders for downstream irrigation. This "call", determined by the Colorado Division of Water Resources, occurs when natural flows are insufficient to meet all water rights on the river and assures that the senior or older water rights receive full supplies before junior or newer water rights receive their water.

Table 2. Annual flow (acre-feet) at selected locations.

Water Year	Vallecito Reservoir Inflow	Vallecito Reservoir Release	Pine River near Bayfield	Pine River near Ignacio	Pine River at La Boca	Spring Creek at La Boca	Sum Pine and Spring Creek at La Boca
1941	391,077	338,894	411,488				
1942	341,734	338,931	350,132				
1943	215,120	216,359	220,554				
1944	331,774	363,975	382,395				
1945	227,395	193,501	191,458				
1946	176,207	170,793	166,231				
1947	268,181	216,970	211,390				
1948	378,228	410,505	410,576				
1949	357,508	363,181	368,059				
1950	173,604	197,045	196,191				
1951	149,315	149,435	145,503		31,985	11.023	43,009
1952	364,480	322,239	322,496		282,242	22,148	304,390
1953	156,694	180,976	175,930		62,172	21,532	83,703
1954	198,713	178,048	176,682		64,058	24,294	88,352
1955	207,075	196,707	192,151		80,400	22,359	102,759
1956	172,340	210,701	199,557		70,016	21,186	91,203
1957	391,888	327.233	332,793		323,278	19,168	342,446
1958	325,533	361,829	359,938		327,298	23,603	350,901
1959	136,650	166,937	166,003		56,017	15,263	71,281
1960	252,723	225,104	224,237		141,419	20,916	162,335
1961	218,899	190,879	192,746		105,283	22,709	127,992
1962	261,212	277,438	277,238		152,410	20,271	172,681
1963	173,504	179,560	179,579		82,060	18,220	100,280
1964	161,813	163,852	163,628		58,578	13,815	72,393
1965	366,206	311,399	310,845		241,134	22,755	263,889
1966	252,226	279,751	279,235		166,096	20,277	186,372
1967	185,753	197,254	197,274		78,825	20,102	98,927
1968	267,187	225,507	225,376		107,141	20,285	127,426
1969	288,637	274,205	274,076		179,647	28,413	208,060
1970	281,059	274,362	274,316		162,482	25,524	188,006
1971	195,121	238,709	238,699		104,077	23,449	127,525
1972	201,974	219,217	219,235		85,743	22,053	107,797
1973	432,353	385,622	386,277		421,579	34,226	455,805
1974	149,243	198,799	198,956		77,286	18,378	95,664
1075	369,002	314,793	314,648		279,630	25,326	304,955
1976	230,775	240,014	239,798		120,000	25,517	147.517
1977	100,803	142,324	142,032		56,638	11,330	67,967
1978	217,902	191,734	190,828		85,878	18,294	104,172
1979	436,217	407,236	407,222		401,137	30,425	431,562
1980	361,959	345,086	341,815		292,141	32,119	324,261
1981	200,094	227,129	226,032		84,813	24,813	109,626
1982	321,200	257,646	257,508		164,767	26,076	190,843
1983	318,490	356,483	358,028		275,740	29,271	305,011
1984	318,632	310,300	310,988		223,920	26,744	250,664
1985	418,492	404,867	403,415		343,477	30,154	373,631
1986	400,436	398,582	398,838		329,845	27,707	357,552
1987	417,462	416,108			364,715	34,502	399,216
1988	240,643	228,775			127,825	24,973	152,798
1989	215,038	254,858			136,808	24,073	160,880
1990	228,906	191,324			85,436	18,611	104,046
1991	250,917	252,344			156,559	23,985	180,545
1992	245,604	245,895			155,992	27,591	183,583
1993	329,238	311,577			265,614	29,498	295,112
1994	228,209	253,563			158,243	23,119	181,362
1995	389,457	362,097			270,575	29,099	299,674
1996	150,394	198,512			66,664	29,056	95,720
1997	414,433	351,287			284,779	24,508	309,286
1998	251,939	274,010			149,272	18,620	167,892
199	378,674	357,541			282,468	22,347	304,815
2000	177,657	225,275		27,838	78,123	18,693	96,816
2001	302,938	265,912		88,807	155,242	21,492	176,735
2002	74,463	116,406		15,902	32,267	7,079	39,347
2003	163,139	144,353		8,614	35,054	12,564	47,618
2004	243,791	211,090		40,638	99,594	18,839	118,433
2005	402,417	385,020			325,597	20,504	346,101

Table 3. Summary statistics (cfs) for Pine River system at selected gaging sites.

Vallecito Reservoir Inflow (Average Monthly 1951-2005)				
	Mean	**Median**	**Min**	**Max**
Jan	79	76	43	158
Feb	77	71	43	138
Mar	115	105	48	258
Apr	346	322	109	703
May	1,088	1,053	254	1,945
Jun	1,245	1,123	123	2,711
Jul	488	345	59	1,534
Aug	287	268	55	1,014
Sep	256	213	54	1,042
Oct	189	146	51	609
Nov	127	105	49	338
Dec	91	85	37	167
Vallecito Reservoir Release (Average Monthly 1951-2005)				
	Mean	**Median**	**Min**	**Max**
Jan	56	46	6	175
Feb	60	44	6	486
Mar	91	48	6	547
Apr	196	111	6	714
May	685	587	196	1,696
Jun	975	824	483	1,955
Jul	722	675	70	1,417
Aug	595	597	107	1,360
Sep	475	453	86	936
Oct	280	250	62	650
Nov	103	52	6	515
Dec	77	49	6	370
Pine River at La Boca, CO (Average Monthly 1951-2005)				
	Mean	**Median**	**Min**	**Max**
Jan	77	66	16	317
Feb	105	79	23	680
Mar	224	175	32	972
Apr	350	211	23	1,339
May	429	181	41	1,719
Jun	486	295	61	1,555
Jul	289	184	24	1,381
Aug	231	188	13	1,349
Sep	210	165	33	725
Oct	186	142	25	672
Nov	130	77	27	709
Dec	102	70	18	396
Spring Creek at La Boca, CO (Average Monthly 1951-2005)				
	Mean	**Median**	**Min**	**Max**
Jan	5	4	0	21
Feb	10	6	2	55
Mar	18	9	2	90
Apr	13	10	1	41
May	38	39	14	65
Jun	57	59	24	79
Jul	66	68	1	111
Aug	65	65	0	132
Sep	57	56	1	92
Oct	33	33	3	88
Nov	10	7	1	30
Dec	5	5	1	20
Sum Pine & Spring Ck at La Boca (Avg Monthly 1951-2005)				
	Mean	**Median**	**Min**	**Max**
Jan	76	68	17	189
Feb	115	86	27	707
Mar	242	194	35	1,030
Apr	363	218	24	1,380
May	467	237	58	1,746
Jun	543	349	99	1,615
Jul	354	252	25	1,462
Aug	296	251	13	1,400
Sep	267	230	34	789
Oct	220	174	28	706
Nov	140	89	29	738
Dec	108	76	20	405

Storage releases can continue into late October or early November. As indicated previously, up to 650 af of Vallecito Reservoir water is now being used annually for M&I purposes and this water is released along with the storage releases for irrigation. Mean monthly releases from Vallecito Reservoir have averaged 50 to 80 cfs in the winter and 600 to 1,000 cfs in the summer. Corresponding minimum monthly releases have been 6 cfs and 190 cfs.

There are a series of private irrigation diversions on the Pine River and immediately below these irrigation diversions, flows on the Pine River can approach zero cfs in summer months. Return flows replenish the river below the diversions. Pine River inflow to Navajo Reservoir, measured as mean monthly flows, has been as low as 6 cfs and as high as 2,000 cfs (Reclamation, 2000).

Ditch diversion records for the Pine River are maintained by the Colorado Division of Water Resources, Division 7 Engineer in Durango, Colorado. There are approximately 771 cfs of senior water rights downstream of the reservoir.

Surface water and Vallecito Reservoir water quality is generally good in the area. Unlike many San Juan mountain rivers, pollution from historic mining is not a problem. There are some irrigation and M&I return flows downstream from Vallecito Reservoir, but the water quality of the Pine River at its origin is so high that downstream quality remains high (Reclamation, 2000).

Groundwater quality problems have been identified in southeastern La Plata County (La Plata County, 2002). There are concerns about the effect of existing and expanding natural gas developments in the area on groundwater quality. Rainfall and snowmelt are the principal sources of natural groundwater recharge, and in irrigated areas deep percolation is an important recharge source.

4.2.1 Environmental Consequences:

Overall, reservoir operations and streamflows should not be significantly different under the No Action and Proposed Alternatives. Under the Proposed Alternative, it is anticipated that an additional 2,350 af of irrigation water (650 af of the 3,000 af converted is already being used for M&I purposes) would be gradually (over a period of many years) converted to M&I uses.

Hydrological impacts are determined by overlaying the Proposed Alternative onto historical reservoir operations and ditch diversions (i.e., water demands) to show impacts. Because the historical reservoir operations include the existing use of up to 650 af of M&I water, the Proposed Alternative was analyzed using an additional 2,350 af of converted water. Three primary assumptions were used in the hydrology analysis:

- The entire 2,350 af would be required to be released for M&I purposes each year;

- The entire 2,350 af would be required to be "restored" each year prior to the beginning of the next year's irrigation season; and
- The 2,350 af would be released only during a call on the river (i.e. during the irrigation season); similar to how the 650 af is released.

It should be noted that the assumption of fully using the 2,350 af each year is conservative; releases would actually vary from zero to 2,350 af depending on water conditions each year.

The converted water would be released to the Pine River generally during the period of the irrigation season when there was a call on the river. This would be over a period ranging from an estimated 45 days to 150 days, depending on river flow conditions. When the additional 2,350 af is fully developed, the M&I water releases could vary between approximately 8 and 30 cfs during the irrigation season, once again depending on river flow conditions. These releases would increase streamflows slightly in the water critical area (from the dam to the Pine River Canal diversion located approximately 4 miles downstream from Bayfield). Below this point, irrigation season streamflows should not change.

Vallecito Reservoir content at the end of the irrigation season under the Proposed Alternative could be up to 2,350 af less than under the No Action alternative. This would normally represent a 1 to 2-foot reduction in reservoir depth in the fall but up to 4 feet in extremely dry years such as 2002.

As stated above, this analysis assumes that any reduction in storage as a result of M&I releases would need to be "restored" each year. Two approaches for restoring this water on an annual basis were analyzed:

1. The most simplistic approach would be to reduce historical non-irrigation season (November through April) releases by an average of 6 cfs each day over the entire winter period. While this would result in a direct reduction in the releases from the reservoir, return flows from M&I uses (between 50 and 90 percent of the M&I uses) would offset this reduction in the flow in the river to some extent throughout the length of the river. Table 4 summarizes changes in reservoir releases once the 3,000 af is fully converted under this method.

2. Recognizing that in some years, a 6 cfs daily reduction in historical winter releases would not be possible (i.e., historical releases have been as low as 6 cfs), a second method for restoring the water released throughout the summer for M&I uses could be incorporated. This method would be a combination of reduced winter releases (Method 1) and reduced historic "operational releases" and over-releases for senior water rights. "Operational releases" are defined as releases that reduce the storage content of the reservoir during the non-irrigation season. In many cases, these releases are made in anticipation of high spring runoff inflow or to reach a storage content of less than 77,000 af in the winter to avoid damage to

the radial gates caused by ice buildup. In most years, these operational releases in the fall are substantial in order to reach the winter storage target of 77,000 af. Over releases for senior water rights are defined as inflows that are passed through the reservoir that are greater than the 771 cfs of senior water rights downstream. This type of release has historically occurred year round.

Table 4. Change in Historical Vallecito Reservoir releases under the Proposed Alternative - Method 1.*

Month	Percentage change in mean release	Change in mean release (cfs)	Change in minimum release (cfs)	Change in maximum release (cfs)
January	-11%	-6	-6	-6
February	-10%	-6	-6	-6
March	-7%	-6	-6	-6
April	-3%	-6	-6	-6
May	<1%	-1	-2	-2
June	<1%	+3	+9	0
July	+1%	+8	+8	0
August	+2%	+10	+8	+2
September	+2%	+9	+4	+10
October	+3%	+7	+1	+11
November	-6%	-6	-6	-6
December	-8%	-6	-6	-6

*Note: The results shown in Table 4 assume that a 6 cfs reduction in the winter releases would always be possible. As indicated in Method 2, this is not always the case

While some of these releases will continue to be necessary even under the Proposed Alternative (i.e., reservoir storage levels will need to be reduced in anticipation of high runoff and to meet winter storage limits), the release volumes could be reduced at times by the amounts necessary to "restore" water that has been or will be released for M&I purposes. The daily reduction was calculated so that the historical releases would never be reduced below 25 cfs. If the historical daily releases were less than 25 cfs, then no changes were made to releases that day. This would result in all or at least some of the water being "restored" during high flow periods which would reduce the amount that would need to be "restored" in the winter months. Consequently, releases in the winter months would not have to be reduced as much as in Method 1. Table 5 summarizes changes (as compared to historical operations) in reservoir releases if the operational and over-releases were used to "restore" the reservoir under the Proposed Alternative.

Table 5 shows that reductions in historic winter releases would be minimal in most years. The analysis does show that there could be some years where reductions in historic winter releases would not be possible (i.e., if winter releases were at the minimum level already) and operational releases were not required (i.e. releases would not be necessary to reach 77,000 af). In these years, the water

released for M&I purposes the previous year could not be made up prior to the next irrigation season. Historical records show that this would have occurred in two or more consecutive years only once in the 65 years of Vallecito Reservoir operations -1962 and 1963. The amount of water that would have been released from storage during this time amounted to 4,500 af. Historically, throughout the 65 years of Vallecito Reservoir operations, storage in Vallecito has never dropped below 10,071 af. Thus, the volume of water necessary to release for M&I purposes would have still been available even in 1962-1963 without impacting the historical irrigation supply. In the third year (1964) of the analysis of historical data, the total volume of water that had been released for M&I purposes over the two-year period was restored.

Table 5. Change in Historical Vallecito Reservoir releases under the Proposed Alternative - Method 2.

Month	Percentage change in mean release	Change in mean release (cfs)	Change in minimum release (cfs)	Change in maximum release (cfs)
January	-3%	-2	No Change	No Change
February	-3%	-2	No Change	No Change
March	-5%	-5	No Change	No Change
April	-3%	-6	No Change	No Change
May	-1%	-5	No Change	No Change
June	0%	-3	9	No Change
July	1%	8	8	No Change
August	2%	10	8	2
September	2%	9	4	10
October	3%	7	1	11
November	-13%	-13	No Change	-44
December	-6%	-4	No Change	No Change

Based on this analysis, there appears to be no significant impacts to hydrological resources or reservoir operations as a result of implementing the Proposed Alternative. Moreover, the impacts to hydrological resources identified in this analysis would likely be less than those described in this section when considering the following:

- The impact analysis does not take into account the mitigating effects of return flows on the system. As mentioned above, between 50 and 90 percent of the M&I uses would be returned to the river which would reduce the impacts to river flows.
- As mentioned above, the assumption in the analysis that the full 2,350 af of M&I water would be released each year is conservative; releases would actually vary from zero to 2,350 depending on hydrologic conditions.
- The volume of "over-releases" is likely greater than what was used in this analysis because there are times when the full 771 cfs of downstream senior water rights are not being diverted which would make additional water available to store in the reservoir. This would result in lower reductions in winter releases.

- The analysis assumes the leased water would be released only during the irrigation season. If a Third Party Contractor called for a year-round diversion, this could result in small increases in winter flows and small decreases in irrigation season flows (from those shown in Tables 4 and 5) in the reach of river upstream from the Pine River Canal diversion.
- The analysis does not take into account that irrigated acreage within the District has been and continues to be reduced due to development such as homes, commercial buildings, farm buildings, roads, gas wells, and expansion of the Town of Bayfield. The reduction of the irrigated lands from 1945 to 2005 is roughly estimated to be 1,300 acres which represents approximately 2,700 AF of storage water that could be used for M&I purposes.

This EA evaluates the conversion of 3,000 af of water. As identified in the proposed contract, it is likely that in the future, additional water will be converted resulting in cumulative effects on hydrologic resources. If additional water were converted, some would likely be for larger Third Party contracts for use outside of the District service area, in which case water would come from the Voluntary Shareholders Pool previously discussed. Potential impacts to hydrologic resources, including irrigation water supplies, would be determined by a separate NEPA process to be completed prior to approval of any Third Party Contract where the water was being delivered outside of the District service area. This analysis would include the cumulative effect of delivering the additional water on top of the 3,000 af being analyzed in this NEPA document.

From a hydrologic standpoint, the impacts of converting water from the Voluntary Shareholders Pool are not anticipated to be significant. The water would be derived by shortening the irrigation season or decreasing the demand of only those who voluntarily give up their water. Because the water would be made up directly from irrigation supplies from those who volunteered, the water would not have to be "restored" as in the previous analysis. Prior to providing water to the Pool, the individual shareholders would be required by the District to prove that doing so would not impact other shareholders' abilities to receive their water. The amount of water that would be removed from the Pine River Basin as a result of this future action would be insignificant when compared to the total amount of water in the basin.

In the event that a portion of the additional 3,700 af of water to be converted did not come from the Voluntary Shareholders Pool (i.e., if the water were leased within the District service area), the impacts of that action would be overlaid on top of the existing operations at that time, which would include the action being covered in this EA (the conversion of 3,000 af of Project water). In this case, and prior to approving the conversion of this water, the conversion would be analyzed to determine if this additional water could be restored without impacting the irrigation supplies.

4.3 Land Use:

4.3.1 Existing Conditions:

The primary land use in the area has historically been agricultural. In recent years, many non-agricultural residents have moved to the Pine River Valley because of a desire to live in a rural setting and because land and housing is relatively more affordable than in the Durango area. La Plata County experienced a 36 percent growth rate between 1990 and 2000 and the town of Bayfield a 42 percent rate during the same period. The unincorporated area of Gem Village just west of Bayfield has also shown rapid growth.

Vallecito Reservoir is surrounded by parcels of private land and the San Juan National Forest. The Pine River drainage south of the reservoir is primarily private land and SUIT land although there are scattered tracts of public land administered by the Bureau of Land Management. Natural gas development has increased in the area with increased well pads, pipelines, and associated facilities.

Much of the recent growth outside of highly developed areas such as Bayfield and Ignacio has depended on groundwater; for example, permits were issued for over 1,880 domestic wells in La Plata County in the 1996-2000 period (La Plata County, 2002). Groundwater supplies are often found in association with irrigated areas, and this tends to concentrate growth on irrigated land. However, groundwater supplies have increasing problems with quantity, quality, and interference with senior water rights. Consequently, hauling water to store in individual cisterns is still a common practice. The Colorado Division of Water Resources regulates water rights for all uses in the area.

Bayfield has a comprehensive plan and land use permitting system and is expected to expand through annexation. Forest Lakes is a large residential subdivision originally viewed as a summer home community but now matured into a year round residential community. Other small subdivisions exist, and numerous small lots created through the minor exempt subdivision process have created pockets of home sites surrounded by agricultural lands. Land use planning is the responsibility of La Plata County and is regulated through the La Plata County Land Use Code. Rural private land development must comply with the Land Use Code. Local planning districts are established, such as the Bayfield District, to obtain citizen guidance on development. The town of Bayfield also has planning authority, and SUIT regulates land use on their Trust and allotted land on the reservation. Along with the rapid development of the area, there is a strong interest and emphasis on protecting rural characteristics, productive agricultural lands, and natural areas (La Plata County, 1997).

4.3.2 Environmental Consequences:

Continued residential growth is projected, especially adjacent to already developed areas and along transportation corridors (La Plata County, 2002) under both the No Action and Proposed Alternatives. Land use will change to smaller agricultural tracts and increased residential use. Residential growth will be accompanied by the need for utility and

transportation improvements. No major industrial projects are forecasted for the area. The responsibility for guiding and regulating this type growth will continue under local entities such as La Plata County, SUIT, or Bayfield.

Continued growth in natural gas development is expected with associated wells, access roads, compressor stations, pipelines, and other facilities.
The Colorado Division of Water Resources will continue to oversee water rights in the area to assure the state priority system is honored. Water converted to M&I uses under the Proposed Alternative is considered the most practical source of water to serve the projected growth. If water use is not converted under the proposed contract, then other, less practical, sources would be developed such as acquisition and storage in new reservoirs of senior irrigation rights and winter/spring flows or piping from the supplies in the Animas River Valley.

4.4 Agriculture:

4.4.1 Existing Conditions:

Lands within the District consist of hills, ridges, and drainages, with elevations ranging from approximately 6,200 feet to 7,400 feet. The greatest portion lies between elevations of 6,300 and 6,800 feet, creating a slight slope to the south. In general, this topography supports flood irrigation practices without requiring much land preparation. Most agricultural lands were developed prior to the construction of Vallecito Dam, and by the 1920's irrigation ditches fully used the Pine River during the summer (Harris, 2001).

Physiographic features divide the agricultural lands into three basic categories based on soil type: bench lands, residual lands, and alluvial lands. The bench lands, which comprise the greatest part of the project, contain the most productive soils in the District and are generally located west of the Pine River. The residual lands contain soils that are generally less productive than those of the bench lands, although successful irrigated agriculture is now occurring on those lands. The alluvial lands also include highly productive soil, which is generally permeable, allowing for good root and water penetration (Harris, 2001). A small portion of the agricultural lands in the Bayfield vicinity is classified as prime farmland (BLM, 2004).

The Project stores Pine River water in the winter and spring and releases water in the summer and fall to provide irrigation water to supplement existing supplies to over 40,000 acres of private lands and over 15,000 acres of SUIT lands. Project water is released from the reservoir into the Pine River for delivery to private ditches and canals. There are nearly 1,000 Project shareholders who receive Project water through a complex network of private canals and ditches. Included in this delivery system are 5 diversion dams, 196 miles of canals, 148 miles of distribution laterals, and 19 miles of drains. The District provides water to 25 main canals (see Appendix B). Most of these canals are shared by several landowners with varying decreed priorities and flow rates, which together determine the decreed flow rate of a canal.

All irrigation ditches and canals are operated by private groups. Ditch riders, employed by ditch companies, operate the systems to distribute water to individual property owners. Parshall flumes are used to measure water at the private landowner head gates. Each ditch rider is responsible for the proper measurement of water to each ditch and parcel. The ditch riders determine the amount of water needed to satisfy each individual water right on the ditch and then contact the Colorado Division of Water Resources to place their water "order." The Division then contacts the District, and reservoir releases are adjusted accordingly.

4.4.2 Environmental Consequences:

Appendix C contains a report on the effects of the proposed contract on irrigation service from the Pine River Project. In summary, the analysis reveals that making 3,000 af of Project water available for uses other than irrigation will have an insignificant effect on the irrigation supply. This is a result of the relatively small amount of water to be converted when compared to the total Project supply and the corresponding accuracy limits of standard streamflow and water distribution measuring devices. In addition, irrigated lands served by the District have declined by approximately 1,300 acres since 1945, which has lowered the demand for irrigation water by approximately 2,700 af.

As indicated above, irrigated acres have declined and this trend will probably continue as large commercial farms are converted to smaller tracts and subdivisions. This trend would be expected under both the No Action Alternative and the Proposed Alternative and will include continued growth in and around already developed areas and a concentration of growth along major transportation corridors (La Plata County, 2002).

As indicated previously, additional water may be converted in the future subject to additional 1920 Act and NEPA compliance. This water would likely come from the "Voluntary Shareholder Pool". If this additional conversion of water were proposed, both the District and Reclamation would review proposals to assure protection of agricultural interests.

4.5 Fisheries:

4.5.1 Existing Conditions:

The primary fisheries in the project impact area are associated with Vallecito Reservoir and the Pine River. The reservoir is managed by the Colorado Division of Wildlife primarily as a cold-water fishery. Both rainbow trout and kokanee salmon populations are supported by stocking. Brown trout are also present and reproduce naturally in reservoir tributaries. Northern pike and smallmouth bass reproduce in the reservoir and provide recreation opportunities. Other species in the reservoir include yellow perch, walleye, and white suckers.

The Pine River supports a self-sustaining brown and rainbow trout fishery in the 12 mile reach between Vallecito Dam and Bayfield and the Colorado Division of Wildlife is

conducting experimental stocking to reintroduce Colorado River cutthroat trout in the five mile reach downstream from Vallecito (CDOW, 2005). Summer flows are generally adequate in this reach; however, low winter flows occasionally limit habitat.

Downstream from Bayfield brown trout are the dominant game fish and there is an increase in the numbers of warm-water species. Native fish include the flannelmouth sucker, bluehead sucker, mottled sculpin, and speckled dace. The roundtail chub is either very rare or extirpated from the river. Non-native fish include the common carp, white sucker, fathead minnow, channel catfish, bullhead, largemouth bass, and others. The river enters Navajo Reservoir 20 miles downstream from Bayfield and fish from Navajo Reservoir, including kokanee salmon, occasionally migrate into the lower Pine River (SUIT, 1999, 2001).

4.5.2 Environmental Consequences:

The Vallecito Reservoir fishery can be affected by variations in reservoir content and associated changes in water quality, available habitat, and productivity. To a greater extent, the Pine River fishery can be affected by flow levels. The proposed contract would allow for the conversion of up to 3,000 acre-feet of irrigation water for miscellaneous uses. Current use of this water for irrigation results in an estimated depletion to the San Juan Basin of 1,140 acre-feet (38 percent depletion rate for irrigation water) annually. Once fully converted to M&I uses, the depletion is estimated at 595 acre-feet[5]. While it is contemplated that a reduced depletion would occur if water was converted from irrigation to M&I uses, this assessment assumes that the historic depletion of 1,140 af would continue because the proposed contract simply allows for the conversion but does not implement it. There is no guarantee that any water would be converted.

Under the No Action Alternative, significant changes in the fisheries are not projected. Changes under the proposed Contract represent an insignificant amount of change in Pine River flows (see Tables 4 and 5), water distribution in the project area, and reservoir operations. For example, annual Pine River flows immediately downstream from Vallecito Reservoir site varied from 127,000 acre-feet in 1977 to over 450,000 acre-feet in 1941 and changing the use of 3,000 af of this water is relatively minor. In the long term, summer releases from Vallecito could increase by 10 to 20 cfs while winter flows could be reduced by an average of 6 cfs to make up the storage. Winter flow levels will continue to periodically fall below recommended levels. Reservoir levels would be slightly lower in the late summer and fall but should not have significant effects on reservoir productivity.

[5] The 38 percent irrigation depletion is based on the Colorado Water Conservation Board's STATEMOD hydrologic model of the Pine River Basin for the 1929-2003 water years. STATEMOD is a monthly and daily water allocation and accounting model capable of making comparative analyses of various historic and future water management policies in a river basin. M&I depletions are derived from an engineering report documenting compliance with the 1920 Act by Harris Water Engineering and is based on a 33 percent depletion from M&I uses diverted from the river and a 15 percent depletion from exchange uses.

Overall, implementation of the Proposed Alternative is not projected to significantly change Vallecito Reservoir operations or Pine River flows; therefore, there should be no impacts expected to the respective fisheries under the Proposed Alternative.

4.6. Wetlands and Wildlife:

4.6.1 Existing Conditions:

The Pine River Project area contains diverse vegetation and wildlife resources that vary with changes in elevation and land use. Ponderosa Pine, mixed conifer and aspen forests occur at higher elevations near Vallecito Reservoir with pinon-juniper woodlands and grasslands/shrublands occurring at lower elevations. Overall nine vegetation types can be identified in the area: grasslands, sagebrush, pinon-juniper woodland, mountain shrubland, oak brush, ponderosa pine woodland, mixed conifers, aspen, and riparian.

The Pine River supports a relatively healthy riparian zone consisting of native cottonwood and willow that provides important habitat and migration routes for a variety of birds and small mammals. Much of the Pine River area provides important deer and elk winter range and associated migration routes (BLM, 2002).

It is estimated that over 4,500 acres of wetlands occur in the area with approximately 1,100 of these associated with the Pine River and the remainder either naturally occurring in uplands or supported by irrigation (canal seepage, tailwater at end of fields, ditch banks) (Bureau of Reclamation, 2000). Approximately 45,000 acres of land have been developed for irrigation over the years and are irrigated from 200 miles of private canals and 150 miles of private distribution laterals. The Colorado Natural Heritage Program has identified several wetland areas of high biodiversity significance along the Pine River downstream from Bayfield (March, et al, 2004).

4.6.2 Environmental Consequences:

The amount of Project water converted from irrigation to M&I uses under the Proposed Alternative is a very small percentage of water presently used for irrigation as discussed previously. Therefore, no major change in wildlife habitat or wetlands supported by irrigation or irrigation facilities is predicted. Likewise, significant changes in Pine River flows are not projected and thus wetlands and other habitat supported by the Pine River are not likely to be affected. Spring flows, important for riparian vegetation maintenance, would not be affected. Increases in summer flows in the river upstream from Bayfield would not be large enough to benefit riparian areas.

Under both the No Action and Proposed Alternatives, the continued trend toward smaller land tracts; increased natural gas production; increased housing; and associated developments such as roads, utilities, and support services in the project area will affect wildlife habitat and wetlands. Habitat and migration corridors will be reduced and

become more fragmented with an overall reduction in the quality of wildlife habitat in the area.

4.7 Endangered Species:

4.7.1 Existing Conditions:

The Fish and Wildlife Service (2005) has provided the following list of threatened or endangered species that may occur within the influence of the subject project:

Bald Eagle	*Haliaeetus leucocephalus*	Threatened
Canada Lynx	*Lynx canadensis*	Threatened
Colorado pikeminnow	*Ptychocheilus lucius*	Endangered
Razorback sucker	*Xyrauchen texanus*	Endangered
Southwestern willow flycatcher	*Empidonax traillii extimus*	Endangered
Knowlton's cactus	*Pediocactus knowltonii*	Endangered
Mexican spotted owl	*Strix occidentalis lucida*	Threatened
Black-footed ferret	*Mustela nigripes*	Endangered

In 1998, the Fish and Wildlife Service (Service, 1998) prepared a biological opinion on the Vallecito Water Company which would have converted approximately 2,000 acre-feet of Pine River Project water from irrigation to M&I. This opinion estimated that this conversion would reduce depletions from 1,320 acre-feet annually to 660 acre-feet. This project was never implemented as discussed previously.

4.7.2 Environmental Consequences:
Table 6 summarizes Reclamation's conclusions on anticipated effects of the proposed contract on listed species:

Table 6. Anticipated Effects on threatened or endangered species.

Species (Common Name)	Status	Anticipated Effects of Proposed Alternative and No Action Alternative
Bald eagle	Threatened	No effect
Canada lynx	Threatened	No effect
Colorado pikeminnow	Endangered	May affect, likely to adversely affect
Razorback sucker	Endangered	May affect, likely to adversely affect
SW willow flycatcher	Endangered	No effect
Knowlton's cactus	Endangered	No effect
Mexican spotted owl	Threatened	No effect
Black-footed ferret	Endangered	No effect

The "likely to adversely affect" conclusion on endangered fish is based on the continued depletion from the San Juan River even though the proposed contract would not increase depletions from present levels.

The bald eagle is a common winter visitor to southwest Colorado including the Pine River drainage. The eagles are attracted to Vallecito Reservoir during the fall kokanee salmon run, congregating largely at the upper portions of the reservoir near the Vallecito and Grimes Creek inflow areas where most of the spawning kokanee move. Eagles are also distributed along drainages in La Plata County during the winter utilizing carrion, fish, and other food sources. Nesting occurs in several locations in La Plata County (Lyon, 2004) and nesting has been reported along the Pine River in the Ignacio vicinity (BLM, 2002). The proposed contract is not anticipated to have any effect on the eagle because changes in river flows and reservoir operations are not projected to affect riparian areas or food sources used by the eagles.

The Canada lynx has recently been reintroduced to Colorado with the San Juan Mountains, including areas a few miles from Vallecito Reservoir, being reintroduction areas. Lynx use of the forested areas around Vallecito Reservoir is therefore likely to occur. Some of the lynx wander significant distances from release sites and may pass through the project irrigation area. However, because areas of irrigation and projected M&I use are generally at low elevations and are highly developed for human use, there is little potential to provide suitable habitat for this species and no effect is projected.

The Colorado pikeminnow and razorback sucker do not occur in the Pine River drainage (Southern Ute Indian Tribe, 1999 and 2001) but are found in the San Juan River downstream from Navajo Reservoir. Critical habitat has been designated on the San Juan downstream from Farmington, New Mexico. The San Juan River Basin Recovery Implementation Program for the endangered fish was initiated in 1992 to conserve populations of the fish in the San Juan Basin consistent with the Endangered Species Act and to proceed with water development in the basin. The Recovery Program published Flow Recommendations for the San Juan River in 1999 (Holden, 1999), and Reclamation and the Service are working to meet these recommendations through operations of Navajo Dam and Reservoir in such a manner to meet base and spring peak flows.

For more specific information about the endangered fish, please consult the San Jan River Flow Recommendation Report (Holden,1999).

Any depletion of water is considered an adverse effect on these fish. Even though there is no new depletion or no increase in depletions under the proposed Contract, the ongoing depletions from the water use is considered adverse; and thus Reclamation has concluded that the proposed contract “may affect, likely adversely affect” these species. Neither the No Action nor the Proposed Alternative would affect Reclamation’s ability to meet the flow recommendations in the future.

The southwestern willow flycatcher nests in dense riparian vegetation and is thus vulnerable to impacts associated with modification of riparian habitats such as channelization, recreational development, grazing, and agricultural conversion (Kingery, 1998). Critical habitat has not been proposed in the project area.

Sogge et al., (2002) reported only four nesting territories in the San Juan Basin. In recent years nesting of willow flycatchers has been confirmed along the Pine River on the SUIT Reservation downstream from Bayfield.

Because the proposed contract will not measurably alter Pine River streamflows or irrigation distribution operations, no effect is projected on riparian habitat or potential habitat of this species.

Knowlton's cactus is found on rolling, gravelly hills in pinon-juniper-sagebrush communities and is only known from one location on the border of La Plata County and San Juan County, New Mexico (Lyon, 2004). Most, or possibly all, plants are in New Mexico. Since the state boundary is unsurveyed, the presence of the species in Colorado is not certain. The known occupied habitat is now protected by the Nature Conservancy. The proposed contract would not affect habitat of this species.

The Mexican spotted owl occurs in rocky canyons and forested mountains generally below 9,500 feet. Very limited nesting has been reported in Mesa Verde National Park and in south-central mountains in Colorado (Kingery, 1998) but is not reported from the project area. Potential habitat does occur in isolated canyons in portions of La Plata County. Potential habitat of this species would not be affected by the proposed contract.

The black footed ferret occurs in northwestern Colorado and Wyoming and is being managed through a reintroduction program. There is no evidence of presence in the project area and no effect is anticipated.

4.8 Cultural Resources:

4.8.1 Existing Conditions:

Cultural resources are physical or other expressions of human activity or occupation. Such resources (hereby referred to as historic properties) include culturally significant landscapes, prehistoric and historic archaeological sites and isolated artifacts or features, historic structures, human burials, sacred sites, and areas of important cultural value to existing communities (traditional cultural properties (TCPs)). Historic Properties that are eligible for inclusion in the National Register of Historic Places (NRHP) are protected under the National Historic Preservation Act of 1966, as amended in 1992 (NHPA), and may also be protected under the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), the American Indian Religious Freedom Act (AIRFA) and Executive Order 13007, Protection of Native American Sacred Sites, and other state, agency, city, or tribal laws and policies.

There is a wide range of cultural resources in the Pine River Project Area (PRPA), and through recent studies for other projects by Reclamation (Mabry et al, 2002 and Pfertsh and Neely, 2005) and Bureau of Land Management (2002, 2004) there is a large amount of cultural resources background information to evaluate the Proposed Alternative.

The PRPA is in the Northern San Juan River basin, a geographic and cultural region well known for its archaeology and contemporary/historical Native American and Euroamerican heritage. The PRPA includes the Pine River drainage from Vallecito Reservoir to where it enters Navajo Reservoir at the Colorado-New Mexico state line, a portion of the Salt Creek drainage to the west, and portions of the lower Piedra River and Sambrito Creek drainages to the southeast. Prominent cultural/archaeological features adjacent to or within the project area include the Navajo Reservoir Archaeological District to the south and southeast, and the Spring Creek (Zabel Canyon) Archaeological District to the east. Immediately to the west is the Ridges Basin Archaeological District, site of the Animas–La Plata Project, currently under development. The southern part of the PRPA is on the SUIT Reservation.

The mobile hunter-gatherer Paleoindian and Archaic (9,000 to 500 B.C.) groups were followed by the pre-Puebloan and Ancient Puebloan (A.D. 1 to 1300) (Anasazi) culture. This is followed by the Post-Puebloan/Protohistoric (Ute and Athabascan) Period (A.D. 1300 to 1840). Historic patterns (1664 to Present) related to the Spanish frontier, Ute conflicts and Reservation, mining, railroading, ranching, farming, logging, and water development have also been documented. TCPs affiliated with both the Ute and contemporary Puebloan Tribes are also extant.

While there are over 10,000 years of human existence represented in the region, the Basketmaker III and Pueblo I (A.D. 500 to 900) time periods are the most strongly represented historic property types in the PRPA. Of the 169 recorded Anasazi components in the Pine/Piedra drainages on the SUIT Reservation, 119 date to the Basketmaker III/Pueblo I time periods (BLM 2002). These time periods represent early village formation and a dependence on agriculture. By the beginning of the 10th century A.D. a sharp decline in Puebloan occupation occurred (Lipe et al, 1999) and the area of the PRPA and stretching to Ridges Basin was largely depopulated for unknown reasons. This is supported by excavation results from Navajo Reservoir and more recently, the ALP. In contrast, points further east and west (e.g., Chimney Rock and Mesa Verde) continued to be occupied by Puebloans into the 13th century A.D.

In the northern PRPA, the lands surrounding Vallecito Reservoir, evidence of a Puebloan occupation of any kind is scarce.

4.8.2 Environmental Consequences:

The potential of the Proposed Alternative to cause effects is limited. The area of potential effect is the river corridor from Vallecito Dam to the Pine River Canal diversion point, approximately 4 miles south of Bayfield. Point(s) of diversion, to be determined later, would occur somewhere between those locations. The release of water from Vallecito Dam would have no potential to cause effects because it represents an insignificant amount of change in Pine River flows and would not result in new bank impacts along the river corridor. Potential effects could occur at the point(s) of diversion. If diversion of water is through an existing diversion facility, there is no potential to cause effects because no new ground disturbing activity would take place. However, if it

involves construction of a new diversion facility and/or improvements to an existing diversion facility, there are potential impacts. Those proposed undertakings, once identified, would undergo standard cultural resources review under applicable laws and policies. Since the area(s) of potential impact are rather small, it is anticipated impacts will be avoided or minimized in the event that historic properties are identified. The review would be limited to the diversion facility itself, because as stated earlier, neither distribution of water nor approval of water use is a part of the Proposed Alternative.

Under the Proposed Alternative, this action authorizes the District to use up to a total of 3,000 af of project water for M&I and miscellaneous uses. As indicated above, future use of additional project water would be subject to additional NEPA compliance, and therefore, additional cultural resources review.

4.9 Recreation:

4.9.1 Existing Conditions:

Vallecito Reservoir is a popular recreation area with nature observation, hiking, picnicking, boating, fishing, and waterfowl hunting as popular activities. Recreation facilities are administered by the District and the Forest Service. Reservoir visitation surveys have not been completed at the reservoir; however, annual use is estimated in the 75,000-100,000 visitor day range (Reclamation, 1996). Recreation use has been temporarily affected in recent years by a forest fire that resulted in closures of some recreation sites around the reservoir for safety reasons.

When filled in the spring, the reservoir has 2,720 surface acres to support recreation. On average, the reservoir is drawn down 6 feet by the beginning of July to supply downstream irrigation water, another 8 feet by August, and 6 more feet by September, for a total of 20 feet during the primary recreation use season (Reclamation, 1996).

In the long-term, visitor use numbers and the quality of recreation are affected by the surface acreage of the reservoir during the recreation season, quality of the recreation facilities, protection of the local scenery, and the fishing success.

Downstream from the reservoir, most lands are privately owned or part of the SUIT Reservation. Stream fishing occurs for trout along the Pine River and the river corridor provides a scenic setting for outdoor activities. The city of Bayfield manages a park along the Pine River.

4.9.2 Environmental Consequences:

No significant effect on recreation is projected from the Proposed Alternative. Streamflow changes would be insignificant and would not affect recreation. Late season reservoir levels would be lower under the Proposed Alternative than under the No Action Alternative as discussed in the hydrology section; however, changes are not of a magnitude to affect recreation facilities or use. Overall, recreation use at the reservoir

under the No Action and Proposed Alternatives is projected to increase due to increased development in the area, and the recreational value of the Pine River corridor downstream from the reservoir should increase with the increased population in the area.

4.10 Indian Trust Assets (ITAs) and Environmental Justice:

4.10.1 Existing Conditions:

The United States has a trust responsibility to protect and maintain rights reserved by or granted to American Indian tribes or Indian individuals by treaty, statutes, and executive orders. ITAs can include water rights, trust lands, mineral resources, and hunting and fishing rights.

The Southern Ute Indian Tribe has the right to 1/6 of the water stored in Vallecito Reservoir. This water is used to irrigate over 15,000 acres on the Southern Ute Indian Reservation. The Southern Ute Tribe's project water is not included in the water proposed to be converted.

The Pine River is within the San Juan River Basin and other tribes in the area, including the Jicarilla Apache Nation, the Navajo Nation, and the Ute Mountain Ute Tribe, have water rights or water rights claims in the Basin. The Navajo Nation has substantial quantities of water resource ITAs in the San Juan River Basin based on historic agreements and reserved water rights claims. The Jicarilla Apache Nation established legal rights to San Juan River Basin Water that are based on the Jicarilla Apache Tribe Water Rights Settlement Act of 1992. The Southern Ute and Ute Mountain Ute Tribe's water rights were quantified under the Colorado Ute Indian Water Rights Final Settlement Agreement.

Tribal trust lands of the Southern Ute Indian Reservation lie within the Pine River drainage and include mineral resources and natural gas reserves.

Whereas ITAs deal primarily with Indian lands and natural resources, Environmental Justice considers any adverse effect on minority and low-income populations in the analysis area and may include Indian populations as well. An example would be the inadequate drinking water supply on portions of the Navajo Nation.

4.10.2 Environmental Consequences:

Because the Proposed Alternative will not result in new or additional depletions within the San Juan River Basin and will protect the SUIT interest in Vallecito Reservoir, there is no potential effect to tribal water rights or claims. The ability of downstream Navajo Reservoir operations to meet endangered fish flow recommendations would not be affected and this ability is important for Endangered Species Act compliance for ITA-related water use and development of all four Indian Tribes and Nations.

Based on the nature of the Proposed Alternative, there are no Indian Trust Assets or Environmental Justice concerns in the project area that could be potentially affected by the Proposed Alternative.

5. ENVIRONMENTAL COMMITMENTS

5.1 Commitments:

Any additional future use of Project Water for M&I purposes not addressed by this EA including any Minor Uses water totaling greater than the 2,000 af as described in the proposed Contract and any Third-Party Contracts for greater than the initial 1,000 af as described in the proposed contract, will require additional NEPA compliance. The District will not take any actions through the proposed Contract which are not in conformance with the NEPA document for the proposed Contract without additional NEPA compliance.

If a water lease involves construction of a new diversion facility and/or improvements to an existing diversion facility on the Pine River, there are potential impacts to historic resources. Those proposed undertakings, once identified, would undergo standard cultural resources review under applicable laws and policies. Since the area(s) of potential impact are rather small, it is anticipated impacts will be avoided or minimized in the event that historic properties are identified. The review would be limited to the diversion facility itself, since as stated earlier, neither distribution of water nor approval of water use is a part of the Proposed Alternative.

6. CONSULTATION AND COORDINATION

Environmental scoping for the proposed Contract was conducted during the summer of 2005. Requests for input were mailed to various organizations and levels of government and a public scoping meeting was held on August 4, 2005 in the project area. Appendix D contains a summary of comments received.

Overall there were questions and diverse opinions and statements concerning the effect of the proposed contract on irrigated agriculture, on growth, about the geographic area for water use, about changes in streamflows, and about costs of water. Input was also received on the need for reliable and safe domestic water supplies.

Availability of this draft EA has been announced through news releases and letters of notice of availability were mailed to the following list:

Elected Representatives
Ken Salazar, U.S. Senator
Wayne Allard U.S. Senator
John Salazar, U.S. Representative
Jim Isgar, State of Colorado
Mark Larson, State of Colorado

Indian Tribes
Southern Ute Indian Tribe
Ute Mountain Ute Tribe
Navajo Nation
Jicarilla Apache Nation

Local Agencies and Organizations
Mayor, Town of Bayfield
Mayor, City of Durango
Town of Pagosa Springs
Archuleta County
Town of Ignacio
La Plata County Commissioners
Vallecito Chamber of Commerce
Los Pinos Ditch
Sullivan Ditch
Meyers Asher Ditch
Wommer Ditch
King and Morrison Ditch
Forest Lakes Metro District
Bennet-Meyers Ditch
Pine River Irrigation District
Southwestern Water Conservation District
San Juan RC&D
Florida Water Conservancy District
Island Ditch
Farrell Ditch
Higbee Ditch
Dunham Ditch
Catlin Ditch
Revival Ditch
Spring Creek Ditch
Schroeder Ditch
Pine River Canal
Morrison Consolidated Ditch
Trout Unlimited, Boulder CO
Trout Unlimited, Durango CO
San Juan Citizens Alliance, Durango CO

Media
Southern Ute Drum
Durango Herald
Pine River Times
Durango Telegraph
Pagosa Springs Sun
Daily Times, Farmington NM
KDGO / KISZ RADIO
KSUT Radio
Four Corners Broadcasting

Federal and State Agencies
Park Manager, Navajo State Park
Colorado Water Conservation Board, Denver CO
State Historic Preservation Officer, Denver CO
Colorado Division of water Resources, Durango CO
Colorado Division of Wildlife, Durango and Montrose CO
Fish and Wildlife Service, Grand Junction CO and Albuquerque, NM
Advisory Council on Historic Preservation, Washington, D.C.

Individuals
James Walker, Arboles CO
Burnie Gurule, Bayfield CO
Jerry Cook, Bayfield CO
Dave Brown, Bayfield CO
Ron Newby, Bayfield CO
John Carroll, Bayfield CO
Dirk Nelson, Bayfield CO
Marian Tone, Bayfield CO
Jim Anesi, Durango CO
Erick Aune, Durango CO
Tom Brossia, Durango CO
Win Wright, Durango CO
Robbie and Karen Davis, Ignacio CO
Chuck Sullivan, Ignacio CO
Daniel Weaver, Ignacio CO
Wayne and Cindy Wiebe, Ignacio CO
Gerald Pfeffer, Ignacio CO
Lewis Luchini, Ignacio CO
Tom Conway, Ignacio CO
Steve Summy, Ignacio CO
Jeff Richmond, Ignacio CO
Susan Franzheim, Ignacio CO
Caryl Schmid, Ignacio CO
Carol Thiele, Ignacio CO
Ralph and Genevieve Phelps, Ignacio CO
Ken Beck, Ignacio, CO
Marian Nobles, Durango, CO
Marjorie and Ross Smith, Ignacio, CO
Marikay Shellman, Bayfield, CO
Ralph Klosman, Ignacio, CO
Ralph Phelps, Ignacio, CO
Lewis Luchini, Ignacio, CO
Joan McCaw, Ignacio, CO
Tiffany Draw Ranch, Ignacio, CO

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